



TO END WITH A QUESTION OF INQUIRY: AN UNDERGRADUATE RESEARCH COURSE REDESIGN

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Background and Overview

- Teaching undergraduate research is a multifaceted challenge
 - *Scholarship of Evidence Based Practice (EBP) part of Baccalaureate Essentials but placing in context/relevance for students difficult*
 - *Legacy of focus on the scientific method and quantitative research methods did not allow for engagement with other methods of inquiry*
- Consistently poor course evaluations
 - *Students did not see relevance of EBP to practice*
 - *Course was situated during Jr2/Sr1 semester in the curriculum*
 - *Engagement of student curiosity not a component*
- Open call through the University Curriculum Grant Program (“EDGE”) for course redesign which emphasized undergraduate creative inquiry

Aims of Course Redesign

- Improve student engagement and course interest
- Allow students to:
 - *Develop an individualized process of inquiry through contextualized research interests*
 - *Expand student understanding of the clinical application of EBP*
 - *Present a strong foundation of diverse research methods*
- Meet one or more of the EDGE Curricular Grant Student Learning Outcomes (SLOs):
 - *1. Students will effectively use digital information search tools.*
 - *2. Students will formulate a creative inquiry question or problem.*
 - *3. Students will explore a creative inquiry question or problem*
 - *3.1 Choose an appropriate discovery process to address the problem.*
 - *3.2 Collect information relevant to the problem.*
 - *3.3 Assess collected information in a discipline-appropriate manner.*
 - *4. Students will create an original scholarly or creative project.*
 - *4.1 Applying critical thinking skills and/or*
 - *4.2 Applying creative thinking skills*
 - *5. Students will communicate their findings/creations/art/inventions in a discipline-appropriate manner.*

Methods and Active Learning Activities

- Overall: 15- week semester – course was a three-hour block format each week and the course was broken up into three focus areas for five weeks at a time
- “Front-load” content with associated quizzes and scholarly article critique
 - *Research Methods*
 - Faculty guest lecturer
 - Nurse-scholar-researcher expert interviews
- Literature Review Table*
- Reflective journaling with question prompts
- Socratic-guided peer and faculty seminars with peer critique
- Student-led Research Question Symposium

*Part of original course

LEARNING ACTIVITY:

“Front-load” of Content with Quizzes

- Purpose: Provide a foundation and fundamental basics of the research process
- What and How?
 - *Five Weeks of Structured Class time*
 - History of Research followed by Philosophical Foundations and Key Concepts
 - Quantitative Inquiry
 - Qualitative Inquiry
 - Mixed Methods Inquiry
 - Scholarly Article Critique
 - Literature Search with the University Librarian

LEARNING ACTIVITY:

Expert Nurse-Scholar-Researcher Interviews

- Purpose:
 - *Contextualize the content being delivered*
 - *Provide a face and name of a nurse researcher*
 - *Provided an opportunity for modeling a researcher's inquiry process*
- What and How?
 - *Faculty identified a nurse researcher expert in Quantitative, Qualitative, and Mixed Methods research and developed a common-question interview script*
 - *GA and IT support completed and recorded face-to-face interviews*
 - *Played interview videos during second hour of a three-hour block class time – students maintained access to them during the semester*

LEARNING ACTIVITY: Reflective Journaling

- Purpose:
 - *To promote student self-reflection on their process of inquiry*
 - *To assist student in development of application of content to developing research question*
 - *To help with application of course content to their developing research question*
- What and How?
 - *Students had pre-/post- socratic style question prompts for weekly content – included scholarly article critique opportunities*
 - *Pre-/post- reflection questions on student's own process of inquiry*

LEARNING ACTIVITY:

Socratic-guided Peer and Faculty Seminars with Critique

- Purpose:
 - *To provide faculty guidance and structure to facilitate student progress on development of a research question*
 - *To provide peers with opportunity for critique and additional guidance directly from peers*
- What and How?
 - *Seminar groups were population-focused and led by faculty expert (Pediatrics, Women's Health, and Adult Health)*
 - *Three weeks of seminars and iterative question refinement*

LEARNING ACTIVITY:

Student-led Research Question Symposium

- Purpose:
 - *Provide a forum for students to display their final developed research question and present the evolution of question development*
 - *Provide students an opportunity for peer review and critique*
- What and How?
 - *Three weeks of scheduled presentations*
 - *Developed and used rubric with faculty interrater reliability on assigned final grade*

Results

- Student-centered course which is flexible and provides a framework for learning
- Emphasis on student's individual process of inquiry with each student developing a research question for a symposium presentation
- Appreciation for the Scholarship of EBP
 - *Final journal entries plus course evaluations reflect positive changes/language*
- Continued interest in Scholarship of EBP
 - *12 students have pursued independent research studies*
 - *Four student submissions to the University's annual research day*
 - *One winner of the University's annual research day*
- Mixed method study to compare pre-/post- course redesign
 - *National Survey of Student Engagement (NSSE)*
 - *HESI-RN® Sub-scores*
 - *Analysis of student journal entries*

Exemplar Student-Developed Question Final Presentation

Research Question Process

Mary Glenn Goostree

Topic selection



- ❖ “The use of tanning beds before the age of 30 **increases one’s risk of melanoma by 75%**, and women have a higher incidence of melanoma before the age of 40 than men.”
- ❖ “**Even one indoor tanning session** can increase users’ risk of developing squamous cell carcinoma by 67 percent and basal cell carcinoma by 29 percent.”
- ❖ Nearly **70 percent of tanning salon patrons** are Caucasian girls and young women, and melanoma is increasing faster in women 15-29 years old than in young men of the same age.

-American Academy of Dermatology

FINDING A DIRECTION

- ❖ **Population:** Adolescent Women (18 years and under)
- ❖ **Research Approach:** Mixed Methods

Draft One

Will increasing or improving women's health education to young women, ages 15-20, about the hazards of tanning beds improve the number of women who partake in indoor tanning and decrease their risk for malignant melanoma?





Literature Review

Draft Two

- Current Literature → Older Women
> 10 years ago
- Areas of Education
 - Hazards of indoor tanning
 - Personal motivation
 - Alternative of sunless tanning products

How would an educational plan including not only teaching of the hazardous effects of indoor tanning but also counseling of the emotional motivation, and suggestion of safer alternatives effect the overall number of young women who regularly indoor tan?

COMING TO REALITY

Draft Three

How would health care teaching combining education on hazardous effects of indoor tanning, counseling of the emotional motivation, and safer alternatives effect the overall number of young women who regularly indoor tan?



Draft Four

How would health care driven education on hazardous effects of indoor tanning, counseling of the emotional motivation, and safer alternatives effect attitudes and number of high school age women who regularly indoor tan?

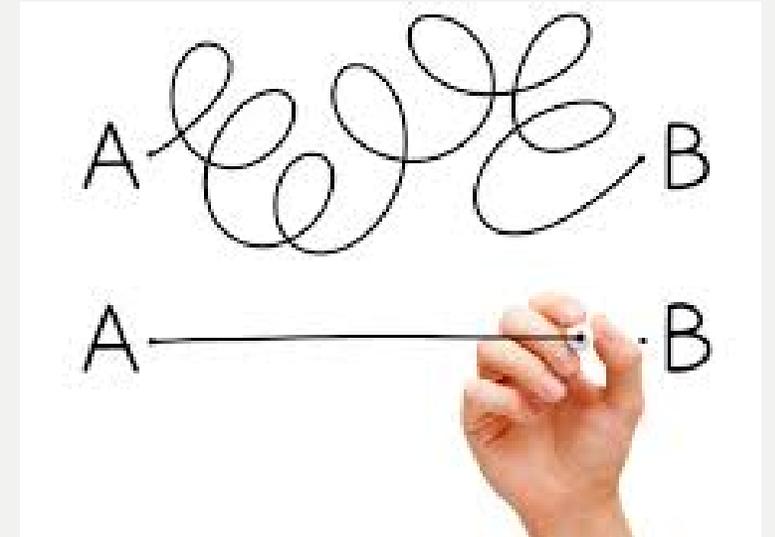


SIMPLIFYING



**Dr. Terah Akard Interview by Danny Miller
Tennessee Tech University**

“...and that was my idea that I thought was great, then I had some mentors that said I might want to look at the literature...”



Final Question

What methods of health education targeting adolescent women would change the decision making of those who use indoor tanning?

References

Indoor tanning. (n.d.). Retrieved April, 2017, from <https://www.aad.org/media/stats/prevention-and-care>

Miller, D. (Director). (n.d.). Interview with Dr. Terah Akard [Video file]. Retrieved from https://cmat.tntech.edu/fstarling/Akard_complete_-_20161110_105846_10.html

University Annual Student Research Day Poster Winners



Who is talking to the ventilated patient?

Brooke Powell, Whitson-Rester Sch...

Introduction

The Society of Critical Care Medicine estimates that 5.7 million people are admitted annually to the Intensive Care Unit (ICU); 20-30% require mechanical ventilation and some level of sedation.

The literature strongly supports that sedated patients benefit emotionally and physiologically from verbal communication. While critical care nurses in the ICU report that verbal communication with the patient is important, research suggests nurses struggle to verbally communicate with ventilated, sedated patients.^[1-3]

I conducted a literature review to explore the potential gap between nurses' perceptions and practice regarding the phenomenon of speaking to sedated patients in the ICU.



Depiction of a patient who is on a mechanical ventilator^[7]

Coverage

The search focused on nurses' verbal communication with sedated and mechanically ventilated patients. I excluded articles which focused on conscious patient who were...

Results

- The literature supports that a majority of verbal communication consists of explaining procedural tasks and...

Presentation and Orientation

Name of patient, name of nurse, time, place, situation

Information

Information about family, life prior to illness, important facts

Functional Assessment and Stimulation

Stimulate and evaluate eye opening/respondiveness/etc.

Methodology

Only six articles were found that fit the inclusion criteria. These studies fall between the years of 1996 and 2018.

Methodologies	Number of Articles
Qualitative	4
Quantitative	1
Mixed Methods	1

demonstrated a correlation between using a structured communication message and a decrease in length of mechanical ventilation as well as length of stay in the ICU.^[4] They based their message on a content analysis developed by Jesus, Simoes, and Voegeli (2013).^[5]

- There is no large scale study exploring nurses' perceptions of verbal communication with sedated patients. The populations of the included studies ranged from 5-30 nurses from the same hospitals. A larger scale, quantifiable study on this subject is warranted.
- There is a gap in the literature exploring current and new nurses' education, formal and informal, as it relates to sedated and ventilated patients.

This chart demonstrates the structured communication message developed by and used in these studies.^[4-5]

THE LOST MALE PARTNER IN THE POST ABORTION EXPERIENCE

Taylor Summers, Susan Piras, and Dolores Bowman



Introduction

- Approximately one in four women in the US have an abortion.
- Recent studies addressing the post abortion period have documented the involved parties re-experiencing the abortion, avoiding pain caused by the event or developing feelings of guilt or anxiety.
- These symptoms are termed post abortion syndrome.
- There is an abundance of literature surrounding post abortion syndrome experienced by the woman; however, the literature is slowly recognizing the effects of abortion on the male partner.

• "Exposure to or participation in an abortion experience, which is perceived as the traumatic and intentional destruction of one's unborn child (2)."

• "Uncontrolled negative re-experiencing of the abortion event (2)."

• "Unsuccessful attempts to avoid or deny painful abortion recollections, resulting in reduced responsiveness (2)."

Coverage

- Literature used from this review pertains to the effects of abortion on men post procedure. Particularly, their psychological experiences for months after their partners' elective abortions.

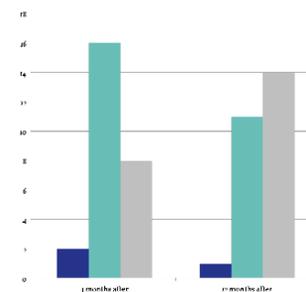
• "Experiencing associated symptoms not present before the abortion, including guilt about surviving (2)."

Methodology

- When searching for terms to find articles related to the experience of men post abortion, Coyle explored phrases like, "men and abortion", "fathers and abortion", "male sexuality and abortion", etc.
- The rest of the studies surveyed the participants either in groups or in a case study at different points after their partners' abortions, up to 12 months.

Results

- Nearly fifty percent of men in a longitudinal study experienced relief and happiness with their partners' decisions to abort, when surveyed at four and twelve months post abortion (3).
- In a case study addressing one male's experience after discovering his partner had an elective abortion, the participant voiced feelings of "voicelessness and worthlessness." It was recommended that male partners be offered counseling resources post abortion in addition to the female (4).
- A literature review of men's experiences surrounding abortion largely evaluated the subjects during or twelve months after the abortion experience and discovered a spectrum of feelings from relief to grief and sadness (5).



■ Only joyful feelings (grief, powerlessness, shame, cynicism, regret, isolation, feelings, anger, crisis)

■ Both positive and painful feelings

■ Only positive feelings (responsibility, relief, maturity, release)

Significance

- In addition to the robust data from the literature, we interviewed a local clinical expert in the field, the expert stated that post abortion syndrome signs and symptoms were not commonly observed until five to ten years post abortion.
- If these men are experiencing a syndrome that mimics depression or PTSD, it is important that they are provided with counseling and mental health resources at the time of the abortion to prevent these mental illnesses five or ten years down the road.

Conclusion

- The existing longitudinal research needs to be further expanded to allow for a post abortion syndrome timeline equivalent to what experts witness in the field.
- Once adequate longitudinal research is performed, adequate psychological resources need to be provided.

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NSSE Results

Activities/Skills	Research Course	Freshman Year	Senior Year
During the school year, about how often have you participated in reflective activities as part of this course?			
(REFLECTIVE) Examined the strengths and weaknesses of your own views on a topic	3.21	2.67	2.70
(REFLECTIVE) Tried to better understand someone else's views by imagining how an issue looks from his or her perspective	3.00	2.75	2.76
(REFLECTIVE) Learned something that changed the way you understand an issue or concept	2.89	2.73	2.77
During the current school year, how much as your coursework emphasized the following critical thinking skills ?			
(CRITICAL THINKING SKILLS) Analyzing an idea, experience or line of reasoning in depth by examining its parts	3.15	2.86	2.99
(CRITICAL THINKING SKILLS) Evaluating a point of view, decision or information source	3.15	2.77	2.66
(CRITICAL THINKING SKILLS) Forming a new idea or understanding from various pieces of information	3.21	2.70	2.77
How much has your experience in this course contributed to your knowledge, skills, and personal development in the following core skills?			
Thinking critically and analytically	3.19	3.01	3.27

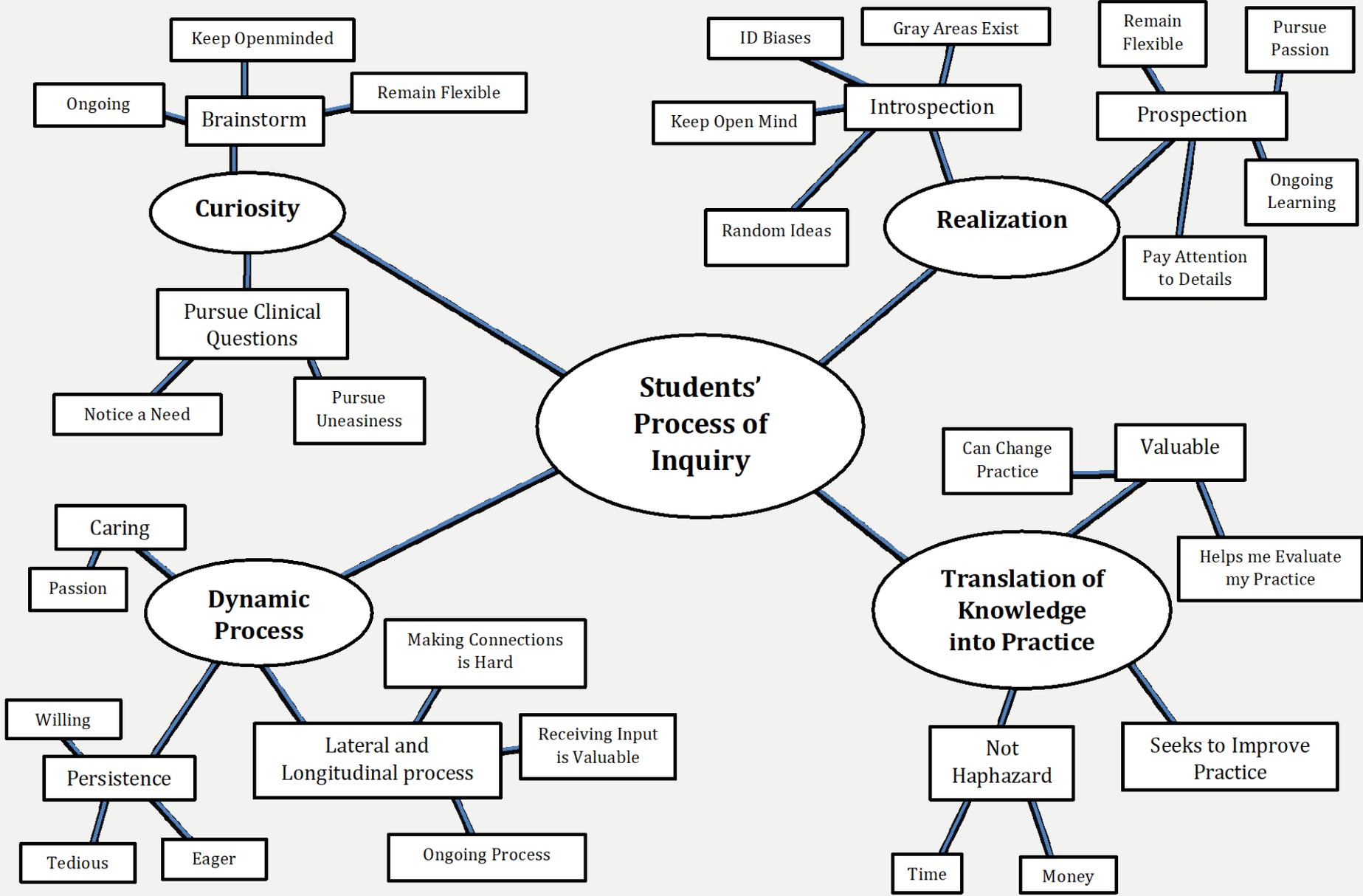
HESI-RN® Exit Sub-Scores

	Spring 2017 Graduating Seniors with Original Research Course (N=57)	Spring 2018 Graduating Seniors with New Research Course (N=64)	Cohen's D Effect Size
AACN Curriculum Category: Scholarship of EBP Sub-score	932	962	0.47 (Medium Effect Size)
NLN Education Competencies: Spirit of Inquiry Sub-score	791	826	0.10 (Small Effect Size)
QSEN: Research & EBP Sub-score	891	929	0.70 (Large Effect Size)
QSEN: Quality Improvement Sub-score	857	967	0.40 (Medium Effect Size)

Thematic Analysis on Final Journal Questions

- Students were asked to respond to these final journal questions:
 - *“As you consider the week to week development of your research question, what have you discovered about your own unique process of inquiry? What have you learned about healthcare research that will impact your clinical practice?”*
 - *“What areas of the inquiry process are strengths for you and why? What areas are challenges/barriers to your inquiry process and why?”*

Thematic Map of Students' Process of Inquiry



Journal Entry Thematic Analysis Summary

- Nursing process was modeled with a consistent connection to clinical practice
 - *Students saw “value” of EBP and the research process*
- Personality of student effected process of inquiry but each was able to generate a final question
- Literature review and peer/faculty review were important activities to help foster development of the inquiry process
- Next Steps - Secondary Analysis:
 - *Diekelmann, Allen, and Tanner’s Steps of Data Analysis (1989) with Application of deWitt and Ploeg’s Expressions of Rigor (2006)*

Lessons Learned and Next Steps

- Important course is team taught – diverse introduction of research methods
- Course time management – set-up and structure
 - *Must be flexible*
 - *Important to allow peer/faculty group meetings*
- Our program of study will need to be examined for ways to encourage independent research and allow it in faculty workload
- Allowed a venue for faculty to come talk about their research
- Challenge if student is online (RN to BSN); found we needed to pull these students out into a different section
- Students can bring about something out of nothing once you have structured well and facilitate the inquiry process

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